

21. Cavity according to claim 19, in which the proportion of the doping ion(s) is 0.1 to 10 moles % for each ion.

23. Laser cavity according to claim 22, in which the said doping ion is Chromium.

24. Cavity according to claim 22, in which the proportion of the doping ion(s) is 1 to 10 moles % for each doping ion.

25. Cavity according to claim 17, in which the layer and/or the substrate are (also) doped with at least one (other) doping agent or substitute in order to modify their structural and/or optical properties.

26. Cavity according to claim 25, in which the said (other) doping ion is chosen among gallium and inactive rare earths.

27. Cavity according to claim 17, in which the thickness of the monocrystalline layer of saturable absorbent material is between 1 and 500  $\mu\text{m}$ .

28. Cavity according to claim 17, in which the said monocrystalline layer of saturable absorbent material is a thin layer with a thickness of between 1 and 150  $\mu\text{m}$ .

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[illegible]

30. Laser cavity according to claim 29, in which the exit mirror is directly deposited on the monocrystalline layer made of a saturable absorbent material.

- a substrate made of a doped or undoped  $Y_3Al_5O_{12}$  (YAG) active laser material with a [100] orientation is supplied in the shape of a sheet with parallel faces polished on its two faces;
- a monocrystalline layer of doped YAG saturable absorbent material is deposited on one of the faces of the said  $Y_3Al_5O_{12}$  (YAG) active laser material, by liquid phase epitaxy or by a similar process;
- the saturable absorbent monocrystalline layer thus deposited is polished;
- the entry and exit mirrors are deposited on the two polished faces of the cavity;
- the substrate - monocrystalline layer - mirrors complex thus obtained is cut out.

1. The first step is to identify the problem. This involves understanding the current situation and what needs to be changed.